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United States Department of Agriculture

Soil Conservation Service

Montana Basin Outlook Report February 1, 1994

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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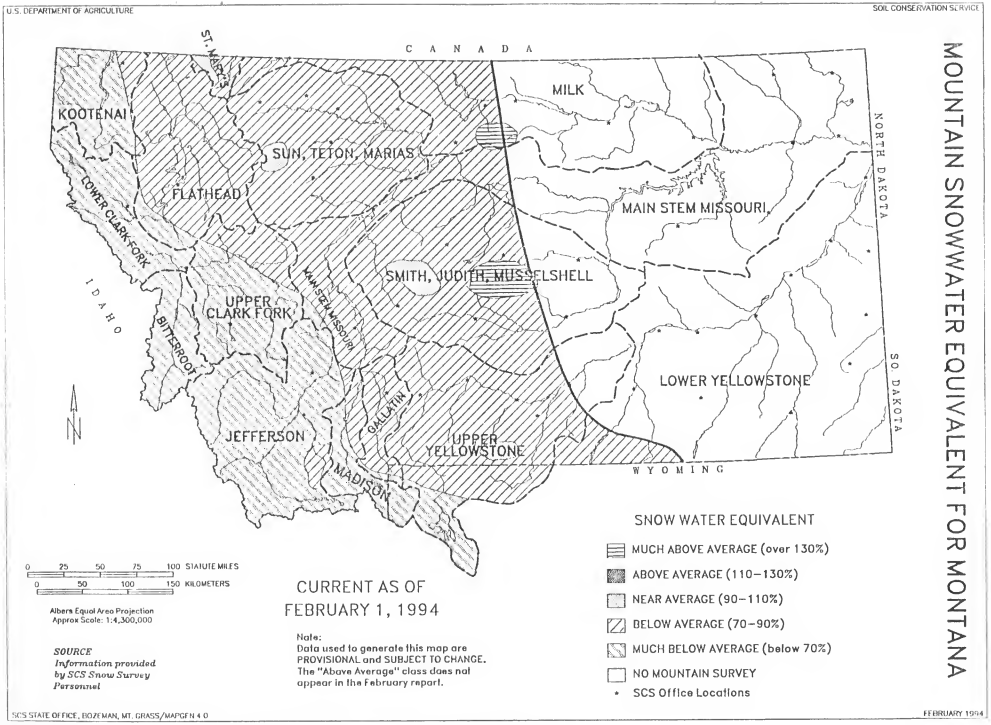
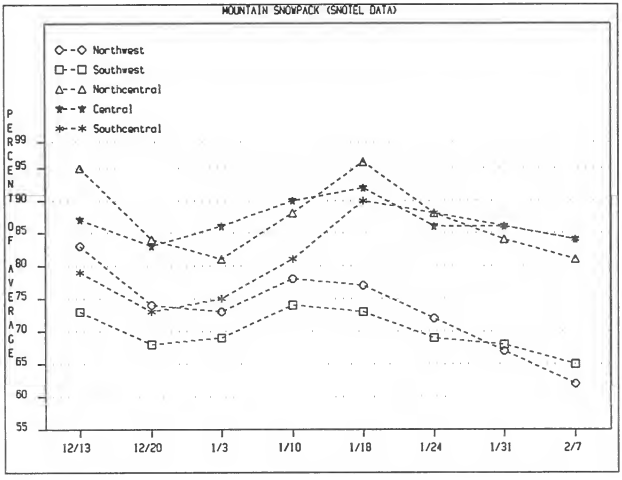

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MOUNTAIN SNOWWATER EQUIVALENT FOR MONTANA
C A N A D A
ST. MARY'S
KOOTENAI
SUN, TETON, MARIAS
MILK
NORTH DAKOTA
FLATHEAD
MAIN STEM MISSOURI
LOWER CLARK FORK
I D A H O
SMITH, JUDITH, MUSSELSHELL
MIAMI-MISSOURI
UPPER CLARK FORK
BITTERROOT
SO. DAKOTA
LOWER YELLOWSTONE
GALLATIN
JEFFERSON
UPPER YELLOWSTONE
MADISON
W Y O M I N G
0 25 50 75 100 STATUTE MILES
0 50 100 150 KILOMETERS
Albers Equal Area Projection
Approx Scale: 1:4,300,000
SOURCE
Information provided by SCS Snow Survey Personnel
CURRENT AS OF FEBRUARY 1, 1994
Note:
Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE. The "Above Average" class does not appear in the February report.
SNOW WATER EQUIVALENT
MUCH ABOVE AVERAGE (over 130%)
ABOVE AVERAGE (110–130%)
NEAR AVERAGE (90–110%)
BELOW AVERAGE (70–90%)
MUCH BELOW AVERAGE (below 70%)
NO MOUNTAIN SURVEY
SCS Office Locations
SCS STATE OFFICE, BOZEMAN, MT. GRASS/MAPGEN 4.0
FEBRUARY 1994


MOUNTAIN SNOWPACK (SNOTEL DATA)
Northwest
Southwest
Northcentral
Central
Southcentral
PERCENT OF AVERAGE
99
95
90
85
80
75
70
65
60
55
12/13
12/20
1/3
1/10
1/18
1/24
1/31
2/7

MONTANA Water Supply Outlook Report as of February 1, 1994

Storms during January give eastern Montana a good dose of winter with several cold and snowy periods. On the other hand, western Montana had mostly warm and dry weather. In several locations, in western Montana, high temperatures were near or set new record highs.

SNOWPACK

As of February 1, snowpack conditions in the fourteen major river basins of Montana are 26 percent below average and 15 percent below last year.

Snowpack extremes occurred in the Bears Paw Mountains, in northcentral Montana, where the snowpack was 64 percent above average and 35 percent above last year and in the Rock Creek Watershed, in the Upper Clark Fork River Basin, where the snowpack was 48 percent below average and 26 percent below last year.

West of the Continental Divide, snowpacks were 30 percent below average and 19 percent below last year. East of the Continental Divide snowpacks were 24 percent below average and 14 percent below last year.

With about 60 percent of the winter snowpack in place by February 1, many areas in the western part of Montana need to have above average snowfall over the next two months. By the time the winter season reaches March 1, we should have about 80 percent of the winter snowpack on the ground. It's not time to become extremely worried about the lack of snowpack in many areas of northwest and southwest Montana, but the amount of snowfall during February will begin setting the outlook for spring and summer water supplies.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
KOOTENAI	69	83
FLATHEAD	79	85
UPPER CLARK FORK	64	82
BITTERROOT	63	75
LOWER CLARK FORK	59	69
JEFFERSON	61	69
MADISON	62	57
GALLATIN	76	82
MAINSTEM MISSOURI	84	93
SMITH-JUDITH-MUSSELSHELL	96	102
SUN-TETON-MARIAS	85	102
ST. MARY AND MILK	98	107
UPPER YELLOWSTONE	76	92
LOWER YELLOWSTONE	78	97

BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 1, 1994

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
MONTANA						
ASHLEY LAKE	4000	2/02/94	15	4.1	4.7	3.9
ASHLEY DIVIDE	4820	2/02/94	16	4.0	5.4	5.0
BADGER PASS PILLOW	6900	2/01/94	---	16.1	15.9	22.8
BANFIELD MTN PILLOW	5600	2/01/94	---	7.9	10.9	13.6
BARKER LAKES PILLOW	8250	2/01/94	---	6.7	7.0	9.4
BASIN CREEK PILLOW	7180	2/01/94	---	3.8	4.4	3.8
BASSOO PEAK	5150	2/01/94	18	4.4	6.6	--
BEAGLE SPGS PILLOW	8850	2/01/94	---	4.2	5.0	5.3
BEAVER CREEK PILLOW	7850	2/01/94	---	8.1	12.5	11.6
BISSON CREEK PILLOW	4920	2/01/94	---	4.6	6.4	6.9
BLACK BEAR PILLOW	7950	2/01/94	---	16.5	27.9	24.5
BLACK PINE PILLOW	7100	2/01/94	---	6.1	6.1	8.0
BLACKTAIL	5650	1/28/94	25	7.1	9.8	8.9
BLOODY DICK PILLOW	7550	2/01/94	---	5.1	6.3	8.2
BOULDER MTN PILLOW	7950	2/01/94	---	11.1	12.0	12.8
BOX CANYON PILLOW	6700	2/01/94	---	6.0	6.0	7.0
BOXELDER CREEK	5100	1/27/94	30	8.0	6.3	5.8
BRIDGER BOWL PILLOW	7250	1/29/94	---	13.0	12.1	15.9
BRIDGER BOWL	7250	1/28/94	49	15.6	13.1	17.0
CALVERT CR PILLOW	6430	2/01/94	---	2.5	5.7	6.1
CARROT BASIN PILLOW	9000	2/01/94	---	12.8	19.6	17.3
CHESSMAN RESERVOIR	6200	1/25/94	7	1.4	2.1	2.7
CHICKEN CREEK	4060	1/27/94	39	10.9	12.2	10.9
CLOVER MDW PILLOW	8800	2/01/94	---	8.7	11.0	11.5
COLE CREEK PILLOW	7850	2/01/94	---	11.6	7.4	10.2
COMBINATION PILLOW	5600	2/01/94	---	2.5	3.0	3.8
COPPER BOTTOM PILLOW	5200	2/01/94	---	6.7	8.7	7.4
COPPER CAMP PILLOW	6950	2/01/94	---	11.3	15.3	22.6
COPPER MOUNTAIN	7700	1/25/94	18	3.0	7.4	7.0
COYOTE HILL	4200	1/28/94	23	5.8	5.8	7.5
CREVICE MOUNTAIN	8400	1/26/94	26	5.9	--	--
CRYSTAL LAKE PILLOW	6050	2/01/94	---	12.0	8.4	8.4
DAISY PEAK	7600	1/28/94	20	3.8	5.2	7.0
DALY CREEK PILLOW	5780	2/01/94	---	5.2	6.5	7.8
DARKHORSE LK. PILLOW	8700	2/01/94	---	13.6	14.4	22.0
DEADMAN CR PILLOW	6450	2/01/94	---	8.3	7.1	6.7
DESERT MOUNTAIN	5600	1/29/94	28	8.4	9.4	10.1
DISCOVERY BASIN	7050	1/26/94	20	4.8	5.4	6.8
DIVIDE PILLOW	7800	2/01/94	---	4.6	8.0	6.9
DIX HILL	6400	1/30/94	22	5.2	6.5	8.2
DUPUYER CREEK PILLOW	5750	2/01/94	---	8.6	5.9	7.8
EMERY CREEK PILLOW	4350	2/01/94	---	9.7	10.2	10.9
FISHER CREEK PILLOW	9100	2/01/94	---	16.5	20.5	24.2
FLATTOP MTN PILLOW	6300	2/01/94	---	25.3	24.1	32.3
FOURTH OF JULY	3450	2/01/94	---	3.7E	--	6.4
FROHNER MDWS PILLOW	6480	2/01/94	---	3.6	4.7	5.6
GARVER CREEK PILLOW	4250	2/02/94	---	6.7	6.8	7.3
GARVER CREEK	4250	2/02/94	22	5.8	7.8	7.6
GIBBONS PASS	7100	2/01/94	---	9.3e	--	15.4
GRAVE CRK PILLOW	4300	2/01/94	---	10.4	9.9	11.9

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
GRIFFIN CR DIVIDE	5150	2/01/94	19	4.5	8.0	--
HAND CREEK PILLOW	5030	2/01/94	---	5.5	7.8	8.3
HAWKINS LAKE PILLOW	6450	2/01/94	---	9.0	12.7	19.3
HEBGEN DAM	6550	1/28/94	23	5.8	9.8	8.3
HELL ROARING DIVIDE	5770	2/01/94	52	16.8	22.1	20.5
HERRIG JUNCTION	4850	1/27/94	50	15.3	18.3	16.7
HOLBROOK	4530	1/30/94	28	7.3	5.8	7.2
HOODOO BASIN PILLOW	6050	2/01/94	---	17.1	22.9	31.0
HOODOO BASIN	6050	1/28/94	60	19.6	26.1	33.4
HOODOO CREEK	5900	1/28/94	49	15.2	22.4	30.3
INTERGAARD	6450	1/26/94	14	3.2	2.8	5.2
JOHNSON PARK	6450	1/28/94	15	3.0	3.8	4.8
KIWANIS CAMP	3720	1/27/94	12	3.1	2.8	1.6
KRAFT CREEK PILLOW	4750	2/01/94	---	9.3	8.5	11.4
LAKEVIEW RDG. PILLOW	7400	2/01/94	---	2.1	11.0	8.3
LEMHI RIDGE PILLOW	8100	2/01/94	---	5.2	5.0	6.9
LICK CREEK PILLOW	6860	2/01/94	---	5.9	5.9	8.1
LONE MOUNTAIN	8880	1/31/94	38	10.6	13.8	15.6
LOWER TWIN PILLOW	7900	2/01/94	---	6.2	9.3	12.3
LUBRECHT PILLOW	4680	2/01/94	---	2.8	3.9	4.5
LUBRECHT FOREST NO 3	5450	2/01/94	11	2.4	3.9	5.0
LUBRECHT FOREST NO 4	4650	2/01/94	5	1.2	2.6	2.7
LUBRECHT FOREST NO 6	4040	2/01/94	4	.9	2.6	3.2
LUBRECHT HYDROPLOT	4200	2/01/94	14	2.6	3.3	5.4
MADISON PLT PILLOW	7750	2/01/94	---	9.6	16.6	16.1
MANY GLACIER PILLOW	4900	2/01/94	---	10.6	9.8	11.4
MARIAS PASS	5250	1/27/94	33	11.3	11.8	11.2
MAYNARD CR PILLOW	6210	1/29/94	---	6.9	5.8	7.0
MAYNARD CREEK	6210	1/29/94	29	8.3	7.3	9.7
MONUMENT PK PILLOW	8850	2/01/94	---	11.4	11.3	13.9
MOSS PEAK PILLOW	6780	2/01/94	---	17.8	21.9	24.4
MT LOCKHART PILLOW	6400	2/01/94	---	10.9	10.8	14.0
MULE CREEK PILLOW	8300	2/01/94	---	7.0	7.7	10.2
NEVADA CREEK PILLOW	6480	2/01/94	---	6.8	7.8	8.6
NEW WORLD	6900	1/27/94	29	6.8	7.8	9.6
NEWTON MOUNTAIN	5600	1/27/94	48	15.9	18.6	22.2
NEZ PERCE CMP PILLOW	5650	2/01/94	---	6.9	8.6	9.8
NEZ PERCE CREEK	6600	1/25/94	12	2.4	3.8	4.5
NOISY BASIN PILLOW	6040	2/01/94	---	21.6	26.8	26.2
N.F. ELK CR PILLOW	6250	2/01/94	---	5.2	6.5	8.1
NF JOCKO PILLOW	6330	2/01/94	---	22.1	23.6	30.2
NORTH FORK JOCKO	6330	1/25/94	71	23.2	24.8	27.5
N.E. ENTRANCE PILLOW	7350	2/01/94	---	4.1	4.7	6.4
NORTHEAST ENTRANCE	7350	1/31/94	20	4.1	5.0	6.5
OPHIR PARK	7150	1/30/94	28	7.0	8.3	11.2
PETERSON MDW PILLOW	7200	1/26/94	---	3.5	4.4	6.5
PETERSON MEADOWS	7200	1/26/94	17	3.5	4.6	6.6
PICKFOOT CRK PILLOW	6650	2/01/94	---	5.7	7.8	7.1
PIKE CREEK PILLOW	5930	2/01/94	---	13.7	15.8	17.1
PIPESTONE PASS	7200	1/26/94	9	1.6	2.4	3.3
PLACER BASIN PILLOW	8830	2/01/94	---	12.4	11.7	12.4
PORCUPINE PILLOW	6500	2/01/94	---	3.1	4.1	4.8
RED TOP	5260	1/27/94	40	13.2	15.9	18.4
REVAIS CREEK	4800	2/01/94	3	.4	3.9	2.9
ROCKER PEAK PILLOW	8000	2/01/94	---	6.7	7.2	9.8
ROCKY BOY PILLOW	4700	1/27/94	---	4.3	4.2	3.6

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
ROCKY BOY	4700	1/27/94	18	4.9	3.0	3.2
SACAJAWEA	6550	1/31/94	27	9.4	8.4	--
SADDLE MTN PILLOW	7900	2/01/94	---	9.9	13.9	17.0
SHORT CREEK PILLOW	7000	2/01/94	---	3.3	3.7	3.6
SHOWER FALLS PILLOW	8100	2/01/94	---	12.2	13.2	14.8
SILVER RUN PILLOW	6630	2/01/94	---	4.0	2.7	3.6
SKALKAHO PILLOW	7260	2/01/94	---	8.3	10.6	15.8
S.F. SHIELDS PILLOW	8100	2/01/94	---	8.1	9.4	10.7
SPOTTED BEAR MTN.	7000	1/30/94	28	7.3	8.8	10.3
SPUR PARK PILLOW	8100	2/01/94	---	15.0	13.7	14.8
SQUAW PEAK	6150	2/01/94	28	7.6	10.9	10.0
STAHL PEAK PILLOW	6030	2/01/94	---	18.1	19.8	23.5
STORM LAKE	7780	1/26/94	21	4.4	6.8	8.7
STRYKER BASIN	6180	1/27/94	50	15.5	21.0	21.6
STUART MOUNTAIN	7400	1/25/94	42	13.3	18.2	21.2
SUCKER CREEK	3960	1/27/94	5	1.1	1.0	.5
TAYLOR ROAD	4080	1/27/94	23	5.9	4.0	2.9
TEN MILE LOWER	6600	1/25/94	15	3.4	4.4	5.0
TEN MILE MIDDLE	6800	1/25/94	20	5.2	5.9	7.6
TEPEE CREEK PILLOW	8000	2/01/94	---	4.9	10.7	8.6
TIZER BASIN PILLOW	6840	2/01/94	---	5.3	5.0	7.2
TRINKUS LAKE	6100	1/30/94	72	23.6	26.0	25.0
TRUMAN CREEK	4060	2/02/94	12	2.8E	4.6	3.2
TV MOUNTAIN	6800	1/25/94	27	7.5	14.0	12.0
TWELVEMILE PILLOW	5600	2/01/94	---	9.1	12.2	12.5
TWENTY-ONE MILE	7150	1/30/94	26	6.4	14.2	11.7
UPPER HOLLAND LAKE	6200	1/30/94	60	18.8	20.0	23.4
WALDRON PILLOW	5600	2/01/94	---	8.8	6.8	7.8
WARM SPRINGS PILLOW	7800	2/01/94	---	9.1	9.6	14.1
WEASEL DIVIDE	5450	2/02/94	52	16.4	18.2	--
WEST YELL'ST PILLOW	6700	1/30/94	---	2.9	6.9	6.1
WEST YELLOWSTONE	6700	1/30/94	18	4.2	11.6	7.8
WHISKEY CREEK PILLOW	6800	2/01/94	---	6.4	13.1	11.2
WHITE MILL PILLOW	8700	2/01/94	---	12.0	11.6	16.8
WOOD CREEK PILLOW	5960	2/01/94	---	5.2	6.1	7.1
ALBERTA						
AKAMINA PILLOW CAN.	5810	2/01/94	---	9.4	11.3	13.4
AKAMINA CAN.	5810	1/26/94	33	9.8	13.0	13.7
ALLISON PASS CAN.	6490	1/25/94	33	10.0	9.9	12.5
BOW RIVER CAN.	5080	1/27/94	22	5.2	3.5	6.4
BOW RIVER SUMMITCAN.	6660	1/28/94	37	10.1	3.4	10.1
CHATEAU LAWN CAN.	5710	1/27/94	28	7.1	4.3	8.1
HIGHWOOD SUMMIT CAN.	7250	1/25/94	33	9.0	5.3	10.6
LT ELBOW PILLOW CAN.	7090	2/01/94	---	8.0	--	8.9
LT. ELBOW SUMM CAN.	7090	1/25/94	30	7.5	4.7	8.5
MIRROR LAKE CAN.	6590	1/27/94	30	8.0	4.1	8.5
MUD LAKE CAN.	6200	1/25/94	31	8.2	4.9	8.3
NIGEL CREEK CAN.	6400	1/26/94	38	10.9	3.7	11.1
PIPESTONE UPPER CAN.	5300	1/26/94	28	6.4	4.3	6.6
SUNSHINE PILLOW CAN.	7300	2/01/94	---	16.4	10.6	15.0
SUNSHINE VILLAGECAN.	7300	1/27/94	60	17.7	9.1	15.3
SUNWAPTA FALLS CAN.	4590	1/26/94	29	7.5	1.5	5.3
TENT RIDGE CAN.		1/25/94	32	8.4	5.1	9.0
THREE ISLE LAKE CAN.	7090	1/25/94	51	15.1	10.0	16.1
W.CASTLE (BUSH) CAN.	4990	1/26/94	28	8.7	8.7	10.1

SNOW COURSE		ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
BRITISH COLUMBIA							
BEAVER FOOT	CAN.	6200	1/27/94	19	4.2	--	6.4
FERNIE EAST(NEW)	CAN.	4100	1/27/94	24	7.0	8.9	10.2
FIDELITY MTN.	CAN.	6100	1/30/94	106	36.9	18.9	33.1
FIELD	CAN.	4200	1/26/94	21	4.4	3.7	5.2
FLOE LAKE	CAN.	6860	1/27/94	77	24.4	11.3	21.1
GLACIER	CAN.	4100	1/30/94	60	18.9	11.6	19.7
GRAY CK. LOWER	CAN.	5100	1/28/94	36	10.7	11.6	12.3
GRAY CK UPPER	CAN.	6270	1/28/94	55	16.5	15.7	20.7
KICKING HORSE	CAN.	5400	1/26/94	39	9.7	6.4	10.3
MARBLE CANYON	CAN.	4990	1/30/94	31	8.0	5.9	10.4
MORRISSEY RIDGE	CAN.	6100	1/27/94	43	13.9	15.4	19.4
MOUNT ABBOT	CAN.	6500	1/30/94	89	32.3	18.7	33.1
MT ASSINIBOINE	CAN.	7320	1/27/94	44	12.9	8.5	14.1
MOUNT JOFFRE	CAN.	5740	1/27/94	30	8.0	--	10.8
MOYIE MTN	CAN.	6400	1/30/94	24	6.1	10.2	12.0
SULLIVAN MINE	CAN.	5090	1/30/94	20	5.7	7.9	9.5
THUNDER CREEK	CAN.	6600	1/27/94	22	5.7	5.7	7.8
VERMONT CREEK	CAN.	4990	1/27/94	33	9.3	7.0	13.7

PRECIPITATION

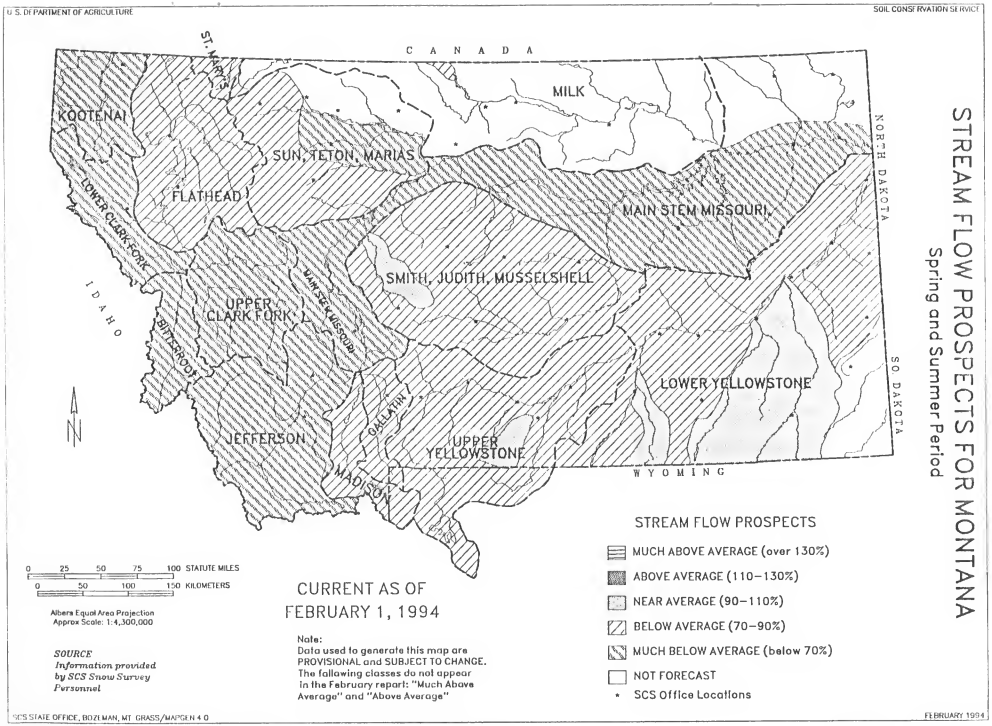
January mountain precipitation for the fourteen major river basins statewide was 17 percent below average and 26 percent above last year. West of the Continental Divide, mountain precipitation was 33 percent below average 14 percent above last year and east of the Continental Divide was 8 percent below average and 33 percent above last year. Water year precipitation west of the Continental Divide was 33 percent below average and 17 percent below last year and east of the Continental Divide was 19 percent below average and 14 percent below last year.

RIVER BASIN	JANUARY % OF AVERAGE	WATER YEAR % OF AVERAGE
KOOTENAI	57	64
FLATHEAD	80	74
UPPER CLARK FORK	62	67
BITTERROOT	68	66
LOWER CLARK FORK	67	65
JEFFERSON	71	67
MADISON	69	67
GALLATIN	79	75
MAINSTEM MISSOURI	72	77
SMITH-JUDITH-MUSSELSHELL	115	98
SUN-TETON-MARIAS	76	77
ST. MARY AND MILK	83	78
UPPER YELLOWSTONE	95	79
LOWER YELLOWSTONE	167	110

RESERVOIRS

Reservoir storages statewide were 11 percent below average and 15 percent above last year. West of the Continental Divide, reservoirs were 23 percent below average and 16 percent above last year. East of the Continental Divide, reservoirs were 8 percent above average and 14 percent above last year.

RIVER BASIN	% OF CAPACITY	% OF AVERAGE
KOOTENAI	43	103
FLATHEAD	37	57
UPPER CLARK FORK	78	115
BITTERROOT	13	36
LOWER CLARK FORK	96	102
JEFFERSON	62	117
MADISON	69	103
GALLATIN	38	108
MAINSTEM MISSOURI	80	101
SMITH-JUDITH-MUSSELSHELL	78	138
SUN-TETON-MARIAS	58	128
ST. MARY AND MILK	68	158
UPPER YELLOWSTONE	48	100
LOWER YELLOWSTONE	59	97


U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
STREAM FLOW PROSPECTS FOR MONTANA
Spring and Summer Period
CANADA
ST. MARY'S
MILK
KOOTENAI
SUN, TETON, MARIAS
FLATHEAD
LOWER CLARK FORK
MAIN STEM MISSOURI
NORTH DAKOTA
SMITH, JUDITH, MUSSELSHELL
IDAHO
UPPER CLARK FORK
MARIAS-MISSOURI
BITTERROOT
GALLATIN
LOWER YELLOWSTONE
SO. DAKOTA
JEFFERSON
MADISON
UPPER YELLOWSTONE
WYOMING
N
0 25 50 75 100 STATUTE MILES
0 50 100 150 KILOMETERS
Albers Equal Area Projection
Approx Scale: 1:4,300,000
SOURCE
Information provided by SCS Snow Survey Personnel
CURRENT AS OF FEBRUARY 1, 1994
Note:
Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE. The following classes do not appear in the February report: "Much Above Average" and "Above Average"
STREAM FLOW PROSPECTS
MUCH ABOVE AVERAGE (over 130%)
ABOVE AVERAGE (110–130%)
NEAR AVERAGE (90–110%)
BELOW AVERAGE (70–90%)
MUCH BELOW AVERAGE (below 70%)
NOT FORECAST
SCS Office Locations
SCS STATE OFFICE, BOZEMAN, MT GRASS/MAPGEN 4.0
FEBRUARY 1994

STREAMFLOW

Streamflow forecasts across Montana are 9 percent below average and 15 percent below last years forecasts. West of the Continental Divide, streamflows are forecast to be 35 percent below average and 17 percent below last year and east of the Continental Divide are forecast to be 26 percent below average and 13 percent below last year.

RIVER BASIN	FORECASTS % OF AVERAGE	FORECASTS % OF LAST YEAR
KOOTENAI	68	93
FLATHEAD	74	85
UPPER CLARK FORK	61	79
BITTERROOT	58	74
LOWER CLARK FORK	64	83
JEFFERSON	53	63
MADISON	78	82
GALLATIN	74	78
MAINSTEM MISSOURI	68	82
SMITH-JUDITH-MUSSELSHELL	88	94
SUN-TETON-MARIAS	76	99
ST. MARY AND MILK	75	92
UPPER YELLOWSTONE	77	96
LOWER YELLOWSTONE	77	96

NOTE: The FORECAST AS % OF LAST YEAR column above, is this years forecast as a percent of last years forecast, not of what actually occurred.

SURFACE WATER SUPPLY INDEX

The Surface Water Supply Index (SWSI) is a measure of surface water availability for the spring and summer months. Water users that rely on mountain precipitation can use the index to evaluate seasonal surface water supplies. The SWSI accounts for mountain snowpack, mountain precipitation, streamflow, reservoir storage, and soil moisture.

SWSI RATING	SURFACE WATER CONDITION
+3.0 to +4.0	Extremely Wet
+2.0 to +3.0	Moderately Wet
+1.0 to +2.0	Slightly Wet
-1.0 to +1.0	Near Average
-1.0 to -2.0	Slightly Dry
-2.0 to -3.0	Moderately Dry
-3.0 to -4.0	Extremely Dry

SWSI's on February 1, were ranging from -3.3 to 2.2 statewide. West of the divide, SWSI's were ranging from -3.3 to -1.3 and east of the divide from -2.9 to 2.2.

SWSI	Basin
-1.9	Kootenai River at Ft. Steele (Kootenai in Canada)
-2.3	Tobacco River
-2.6	Kootenai Ft. Steele to Libby Dam
-1.3	Kootenai River below Libby Dam
-2.7	Fisher River
-2.9	Yaak River
-2.4	North Fork Flathead River
-2.2	Middle FORK Flathead River
-2.7	South Fork Flathead River
-2.4	Flathead River at Columbia Falls
-2.4	Stillwater/Whitefish Rivers
-2.6	Swan River
-2.5	Flathead River at Polson
-2.1	Mission Valley
-1.7	Little Bitterroot River
-2.9	Clark Fork River above Rock Creek
-2.6	Blackfoot River
-2.7	Clark Fork River above Missoula
-3.3	Bitterroot River
-3.0	Clark Fork River below Bitterroot River
-2.7	Clark Fork River below Flathead River
-1.1	Beaverhead River
-2.1	Ruby River
-2.9	Big Hole River
-2.9	Boulder River (Jefferson)
-2.5	Jefferson River
-2.1	Madison River
-1.9	Gallatin River
-2.2	Missouri River above Canyon Ferry
-2.0	Missouri River below Canyon Ferry
-0.1	Smith River
-1.4	Sun River
-1.1	Teton River
0.7	Birch/Dupuyer Creeks
-1.2	Marias River
1.1	Musselshell River
-0.8	Missouri River above Ft. Peck
-0.6	Missouri River below Ft. Peck
-1.7	Milk River
-2.9	Yellowstone River above Livingston
-1.6	Shields River
-2.1	Boulder River (Yellowstone)
-1.7	Stillwater River
-0.2	Rock/Red Lodge Creeks
-1.9	Clarks Fork River
-2.4	Yellowstone River above Bighorn River
-1.0	Bighorn River below Bighorn Lake
2.2	Little Bighorn River
-1.9	Yellowstone River below Bighorn River
0.8	Tongue River
0.1	Powder River

KOOTENAI RIVER BASIN in Montana as of February 1, 1994

Snowpack conditions in the Kootenai River Basin were well below average. Snow water content was 31 percent below average and 17 percent below last year. Snow water content in the East Kootenai River Basin was 13 percent below average and 22 percent above last year.

Mountain precipitation during January was 43 percent below average and 10 percent below last year. Water year precipitation, beginning October 1, 1993, was 36 percent below average and 15 percent below last year.

Lake Koocanusa storage on the last day of January was 3 percent above average and 26 percent above last year.

Streamflows, for the period April through July, are forecast to be 32 percent below average and 7 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -1.9 in the Kootenai at Ft. Steele (Kootenai in Canada); -2.3 in the Tobacco River; -2.6 in the Kootenai Ft. Steele to Libby Dam; -1.3 in the Kootenai River below Libby Dam; -2.7 in the Fisher River; and -2.9 in the Yaak River.

KOOTENAI RIVER BASIN in Montana
Streamflow Forecasts - February 1, 1994

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	Chance of Exceeding * (% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
TOBACCO nr Eureka							
APR-JUL	62	77	88	66	99	114	133
APR-SEP	68	86	98	67	110	128	147
KOOTENAI bl Libby Dam (1,2)							
APR-JUL	3340	4230	4640	80	5050	5950	5779
APR-SEP	3910	4960	5440	80	5920	6970	6772
FISHER nr Libby							
APR-JUL	97	133	157	67	181	215	234
APR-SEP	114	148	171	68	194	230	250
YAAK near Troy							
APR-JUL	215	265	295	61	325	375	483
APR-SEP	230	275	310	61	345	390	505

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
KOOTENAI at Leonia (1,2)							
APR-JUL	3790	4920	5440	76	5960	7090	7199
APR-SEP	4350	5660	6250	76	6840	8150	8275

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

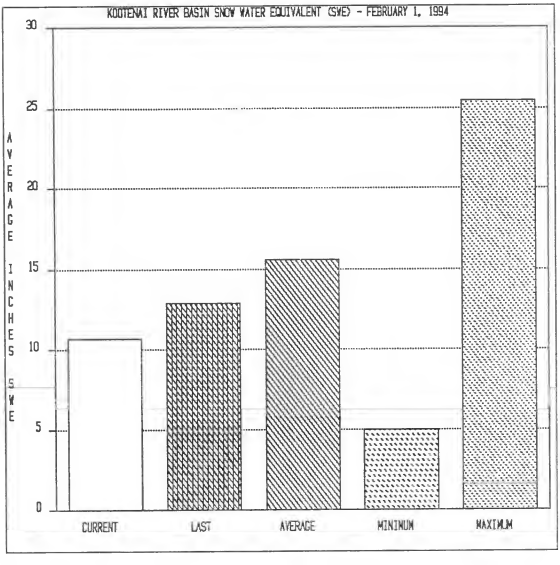
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

KOOTENAI RIVER BASIN in Montana
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
LAKE KOOCANUSA	5748.0	2443.0	1939.0	2381.0

KOOTENAI RIVER BASIN in Montana
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
EAST KOOTENAI in B.C.	19	132	89
KOOTENAI MAINTSTEM in MT	9	80	66
TOBACCO	2	96	81
FISHER	1	71	66
YAAK	5	77	63
KOOTENAI in MT	9	80	66
KOOTENAI ab Bonners Ferry	28	109	80



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1969-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1969-1993, OCCURRED IN WATER YEAR 1972.

FLATHEAD RIVER BASIN as of February 1, 1994

Snowpack conditions in the Flathead River Basin are below average. Snow water content was 21 percent below average and 15 percent below last year.

Mountain precipitation during January was 20 percent below average and 25 percent above last year. Water year precipitation, beginning October 1, 1993, was 26 percent below average and 13 percent below last year.

Reservoir storage on the last day of January was 43 percent below average and 7 percent above last year. Combined Camas reservoir storage was 4 percent below average and 12 percent above last year; combined Mission Valley reservoir storage was 4 percent above average and 52 percent above last year; Hungry Horse storage was 52 percent below average and 3 percent above last year; and Flathead Lake storage was 24 percent below average and 10 percent above last year.

Streamflows, for the period April through July, are forecast to be 26 percent below average and 15 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -2.4 in the North Fork Flathead River; -2.2 in the Middle Fork Flathead River; -2.7 in the South Fork Flathead River; -2.4 in the Flathead River at Columbia Falls; -2.4 in the Stillwater/Whitefish Rivers; -2.6 in the Swan River; -2.5 in the Flathead River at Polson; -2.1 in the Mission Valley; and -1.7 in the Little Bitterroot River.

FLATHEAD RIVER BASIN
Streamflow Forecasts - February 1, 1994

	<=== Drier ===		Future Conditions		=== Wetter ===>		
Forecast Pt	Chance of Exceeding *						
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
NF FLATHEAD nr Columbia Falls							
APR-JUL	985	1100	1180	71	1260	1380	1662
APR-SEP	1110	1240	1320	72	1400	1530	1836
MF FLATHEAD nr West Glacier							
APR-JUL	955	1110	1220	74	1330	1490	1638
APR-SEP	1050	1220	1340	75	1460	1630	1788
SF FLATHEAD nr Columbia Fls (1,2)							
APR-JUL	1120	1420	1560	76	1700	2000	2051
APR-SEP	1200	1520	1660	76	1800	2120	2184
FLATHEAD at Columbia Falls (2)							
APR-JUL	3240	3700	4020	73	4340	4800	5482
APR-SEP	3580	4080	4420	74	4760	5260	5960
STILLWATER nr Whitefish							
APR-JUL	109	130	144	76	158	180	189
APR-SEP	124	146	161	77	176	198	209

Forecast Pt / Forecast Period	<=== Drier ==- Future Conditions -== Wetter ===> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
WHITEFISH nr Kalispell							
APR-JUL	60	72	80	77	88	100	104
APR-SEP	70	82	90	78	98	110	116
SWAN nr Bigfork							
APR-JUL	390	445	485	83	525	580	583
APR-SEP	445	505	550	83	595	655	665
FLATHEAD nr Polson (1,2)							
APR-JUL	3490	4340	4720	74	5100	5950	6390
APR-SEP	3820	4730	5150	74	5570	6480	6926

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

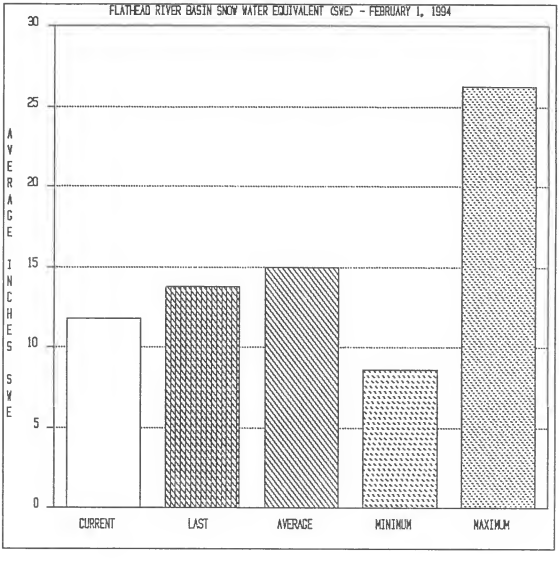
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

FLATHEAD RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
CAMAS (4)	45.2	18.7	16.7	19.4
MISSION VALLEY (8)	100.0	37.8	24.9	36.2
HUNGRY HORSE	3451.0	1136.0	1103.0	2362.0
FLATHEAD LAKE	1791.0	826.9	749.2	1095.0

FLATHEAD RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
NORTH FORK FLATHEAD	11	87	80
MIDDLE FORK FLATHEAD	6	97	81
SOUTH FORK FLATHEAD	7	90	85
STILLWATER-WHITEFISH	5	79	82
SWAN	7	88	80
MISSION VALLEY	3	86	72
LITTLE BITTERROOT-ASHLEY	5	73	80
JOCKO	5	73	67
FLATHEAD	34	85	79



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

UPPER CLARK FORK RIVER BASIN as of February 1, 1994

Snowpack conditions in the Upper Clark Fork River Basin are well below average. Snow water content was 36 percent below average and 18 percent below last year.

Mountain precipitation during January was 38 percent below average and 9 percent above last year. Water year precipitation, beginning October 1, 1993, was 33 percent below average and 22 percent below last year.

Reservoir storage on the last day of January was 15 percent above average and 52 percent above last year. Georgetown Lake storage was 4 percent above average and 22 percent above last year; Lower Willow Creek storage was 127 percent above average and 209 percent above last year; and Nevada Creek storage was 49 percent above average and 700 percent above last year.

Streamflows, for the period April through July, are forecast to be 39 percent below average and 21 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -2.9 in the Clark Fork River above Rock Creek; -2.6 in the Blackfoot River; and -2.7 in the Clark Fork River above Missoula.

UPPER CLARK FORK RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt / Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MOULTON RES inflow (million gal.)							
APR-JUN	27	81	117	55	153	205	212
APR-JUL	23	83	124	53	165	225	234
WARM SPRINGS CK at Anaconda (2)							
APR-JUL	14.0	21	26	68	31	38	38
APR-SEP	21	29	34	72	40	48	47
LITTLE BLACKFOOT nr Garrison							
APR-JUL	22	38	60	72	82	113	83
APR-SEP	24	42	65	73	88	122	89
FLINT CK nr Southern Cross (2)							
APR-JUL	4.0	7.5	9.8	69	12.1	15.6	14.2
APR-SEP	4.6	8.9	11.8	71	14.7	19.0	16.7
FLINT CK bl Boulder Ck							
APR-JUL	17.0	30	39	68	48	61	57
APR-SEP	25	41	52	71	63	79	73
LOWER WILLOW CK RES inflow							
APR-JUL	2.1	6.0	8.7	62	11.4	15.3	14.0
APR-SEP	2.7	6.7	9.5	64	12.3	16.3	14.8

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF) (% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
			Chance of Exceeding *			
MF ROCK CK nr Philipsburg						
APR-JUL	22	31	38 58	45	54	66
APR-SEP	25	36	43 58	50	61	74
ROCK CK nr Clinton						
APR-JUL	89	129	157 53	185	225	296
APR-SEP	109	153	183 55	215	255	333
NEVADA CK nr Finn						
APR-JUL	2.6	8.3	12.1 63	15.9	22	19.1
APR-SEP	3.0	9.0	13.0 63	17.0	23	21
CLEARWATER nr Clearwater						
APR-JUL	90	106	117 68	128	144	172
APR-SEP	95	112	123 68	134	151	181
BLACKFOOT nr Bonner						
APR-JUL	385	485	555 66	625	725	835
APR-SEP	445	555	630 68	705	815	926
CLARK FORK ab Milltown						
APR-JUL	99	250	355 54	460	610	652
APR-SEP	138	305	420 56	535	700	755
CLARK FORK ab Missoula						
APR-JUL	530	755	910 61	1060	1290	1487
APR-SEP	635	880	1050 62	1220	1470	1681

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

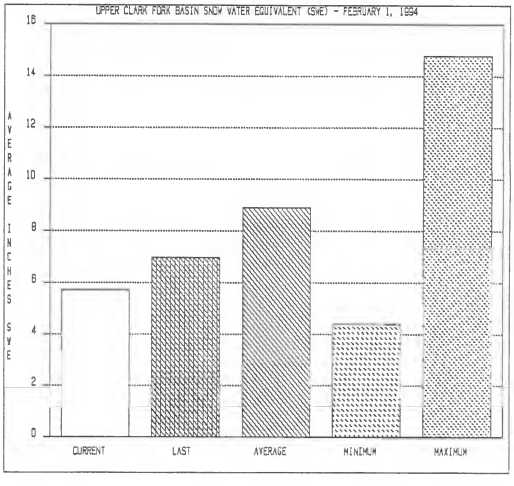
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER CLARK FORK RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
GEORGETOWN LAKE	31.0	28.0	22.9	27.0
LOWER WILLOW CREEK	4.9	3.4	1.1	1.5
NEVADA CREEK	12.6	6.4	0.8	4.3

UPPER CLARK FORK RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
CLARK FORK ab FLINT CREEK	11	87	68
FLINT CREEK	6	85	63
ROCK CREEK	3	74	52
CLARK FORK ab BLACKFOOT	18	85	65
BLACKFOOT	14	80	64
UPPER CLARK FORK	29	82	64



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

BITTERROOT RIVER BASIN as of February 1, 1994

Snowpack conditions in the Bitterroot River Basin are well below average. Snow water content was 37 percent below average and 25 percent below last year.

Mountain precipitation during January was 32 percent below average and 23 percent above last year. Water year precipitation, beginning October 1, 1993, was 34 percent below average and 18 percent below last year.

Reservoir storage on the last day of January was 64 percent below average and 124 percent above last year. Painted Rocks Lake storage was 93 percent below average and 4 percent below last year and Como storage was 43 percent below average and 320 percent above last year.

Streamflows, for the period April through July, are forecast to be 42 percent below average and 26 percent below last years forecasts.

Surface Water Supply Index (SWSI) was -3.3 in the Bitterroot River.

BITTERROOT RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt / Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
WF BITTERROOT nr Conner (2)							
APR-JUL	46	71	88	58	105	130	152
APR-SEP	49	75	93	56	111	137	166
BITTERROOT nr Darby							
APR-JUL	172	240	290	59	340	410	491
APR-SEP	210	280	330	61	380	450	540
ROCK CK nr Darby (2)							
APR-JUL	39	48	53	67	59	67	79
APR-SEP	42	50	56	67	62	70	83
SKALKAHO CK nr Hamilton							
APR-JUL	18.0	24	28	61	32	38	46
APR-SEP	21	27	32	60	37	43	53
BURNT FORK CK nr Stevensville (2)							
APR-JUL	8.0	13.0	16.0	54	19.0	24	29
APR-SEP	11.0	16.0	20	58	23	29	34

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
BITTERROOT at Missoula							
APR-JUL	485	640	745	57	850	1000	1301
APR-SEP	555	720	830	59	940	1100	1418

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

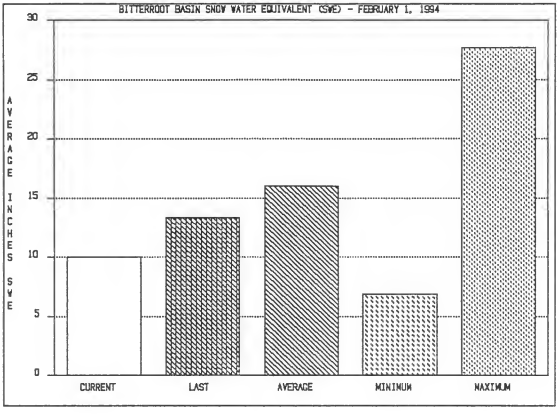
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

BITTERROOT RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********* This Year	Last Year	Average
PAINTED ROCKS LAKE	31.7	2.2	2.3	12.7
COMO	34.9	6.3	1.5	11.1

BITTERROOT RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WEST FORK BITTERROOT	2	75	63
EAST SIDE BITTERROOT	2	79	57
WEST SIDE BITTERROOT	4	74	65
BITTERROOT	8	75	63



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

LOWER CLARK FORK RIVER BASIN as of February 1, 1994

Snowpack conditions in the Lower Clark Fork River Basin are well below average. Snow water content was 41 percent below average and 31 percent below last year.

Mountain precipitation during January was 33 percent below average and 21 percent above last year. Water year precipitation, beginning October 1, 1993, was 35 percent below average and 17 percent below last year.

Noxon Rapids storage on the last day of January was 2 percent above average and 12 percent above last year.

Streamflows, for the period April through July, are forecast to be 36 percent below average and 17 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -3.0 in the Clark Fork River below Bitterroot River and -2.7 in the Clark Fork River below Flathead River.

LOWER CLARK FORK RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions Chance of Exceeding * 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
CLARK FORK ab Missoula							
APR-JUL	530	755	910	61	1060	1290	1487
APR-SEP	635	880	1050	62	1220	1470	1681
CLARK FORK bl Missoula							
APR-JUL	1070	1420	1660	60	1900	2250	2788
APR-SEP	1240	1620	1880	61	2140	2520	3099
CLARK FORK at St. Regis (1)							
APR-JUL	685	1710	2170	59	2630	3650	3686
APR-SEP	760	1890	2410	59	2930	4060	4095
CLARK FORK nr Plains (1,2)							
APR-JUL	4000	6060	7000	67	7940	10000	10450
APR-SEP	4350	6620	7650	67	8680	10900	11470
THOMPSON RIVER nr Thompson Falls							
APR-JUL	40	73	95	44	117	150	214
APR-SEP	54	89	113	47	137	172	240
PROSPECT CREEK at Thompson Falls							
APR-JUL	29	45	56	46	67	83	123
APR-SEP	36	53	64	48	75	92	132

Forecast Pt Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	<=== Drier ===	Future Conditions			=== Wetter ===>		
	========== Chance of Exceeding * ==========						
CLARK FK at Whitehorse Rpds (1,2)							
APR-JUL	4070	6440	7510	64	8580	10900	11730
APR-SEP	4470	7070	8250	64	9430	12000	12910

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

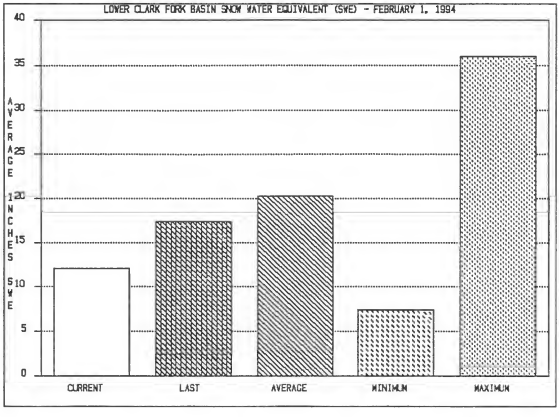
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

LOWER CLARK FORK RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
NOXON RAPIDS	335.0	320.6	286.6	314.2

LOWER CLARK FORK RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER CLARK FORK	29	82	64
BITTERROOT	8	75	63
LOWER CLARK FORK	9	69	59
CLARK FORK TOTAL	43	77	63
FLATHEAD	34	85	79
PEND OREILLE	73	82	71



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

JEFFERSON RIVER BASIN as of February 1, 1994

Snowpack conditions in the Jefferson River Basin were well below average. Snow water content was 39 percent below average and 31 percent below last year.

Mountain precipitation during January was 29 percent below average and 4 percent below last year. Water year precipitation, beginning October 1, 1993, was 33 percent below average and 27 percent below last year.

Reservoir storage on the last day of January was 17 percent above average and 142 percent above last year. Lima storage was 52 percent above average; Clark Canyon storage was 7 percent above average and 104 percent above last year; and Ruby River storage was 29 percent above average and 42 percent above last year.

Streamflows, for the period April through July, are forecast to be 47 percent below average and 37 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -1.1 in the Beaverhead River; -2.1 in the Ruby River; -2.9 in the Big Hole River; -2.9 in the Boulder River; and -2.5 for the Jefferson River as a whole.

JEFFERSON RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt / Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions — Chance of Exceeding * — 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
RED ROCK RIVER near Monida							
APR-JUL	15.0	35	48	49	61	81	97
APR-SEP	11.0	34	50	48	66	90	105
BEAVERHEAD RIVER near Grant							
APR-JUL	12.0	40	60	45	80	109	132
APR-SEP	11.0	48	73	47	98	135	155
BEAVERHEAD RIVER at Barretts							
APR-JUL	37	68	89	52	110	141	172
APR-SEP	53	87	110	54	133	167	203
RUBY RIVER near Alder							
APR-JUL	18.0	36	48	58	60	78	83
APR-SEP	25	46	60	61	74	95	99
BIG HOLE RIVER near Melrose							
APR-JUL	205	340	430	67	520	655	641
APR-SEP	235	375	470	67	565	705	697
BOULDER RIVER near Boulder							
APR-JUL	11.0	33	48	56	63	85	85
APR-SEP	16.0	39	54	59	69	92	91

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
WILLOW CREEK near Harrison							
APR-JUL	3.5	7.1	9.0	51	13.8	21	17.7
APR-SEP	4.4	8.0	10.0	50	15.6	24	20
JEFFERSON RIVER near Three Forks							
APR-JUL	72	275	410	45	545	750	920
APR-SEP	77	295	440	43	585	805	1012

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

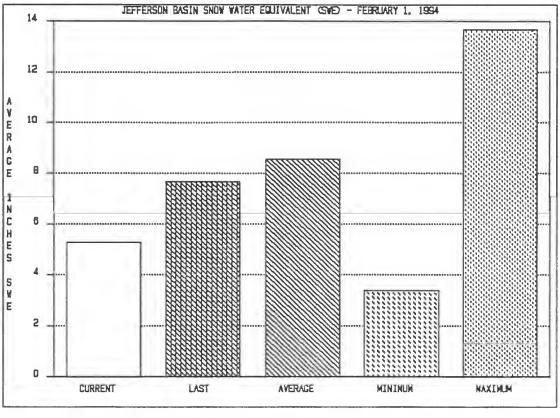
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

JEFFERSON RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
LIMA	84.0	50.8	0.0	33.4
CLARK CANYON	255.6	154.4	75.8	144.7
RUBY RIVER	38.8	30.6	21.5	23.8

JEFFERSON RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
BEAVERHEAD	8	65	60
RUBY	4	71	66
BIGHOLE	9	79	62
BOULDER	7	73	63
JEFFERSON	22	69	61



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1965.

MADISON RIVER BASIN as of February 1, 1994

Snowpack conditions in the Madison River Basin are well below average. Snow water content was 38 percent below average and 43 percent below last year.

Mountain precipitation during January was 31 percent below average and 25 percent below last year. Water year precipitation, beginning October 1, 1993, was 33 percent below average and 40 percent below last year. Reservoir storage on the last day of January was 3 percent above average and 2 percent below last year. Ennis Lake storage was 12 percent below average and 6 percent below last year and Hebgen Lake storage was 3 percent above average and 3 percent below last year.

Streamflows, for the period April through July, are forecast to be 22 percent below average and 18 percent below last years forecasts.

Surface Water Supply Index (SWSI) was -2.1 for the Madison River.

MADISON RIVER BASIN
Streamflow Forecasts - February 1, 1994

	<=== Drier ===	Future	Conditions	=== Wetter ===>		
Forecast Pt	========== Chance of Exceeding * ==========					
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MADISON RIVER near Grayling							
APR-JUL	240	280	305	80	330	370	380
APR-SEP	315	365	395	81	425	475	486
MADISON RIVER near McAllister							
APR-JUL	395	465	510	77	555	625	662
APR-SEP	515	595	645	78	695	775	831

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

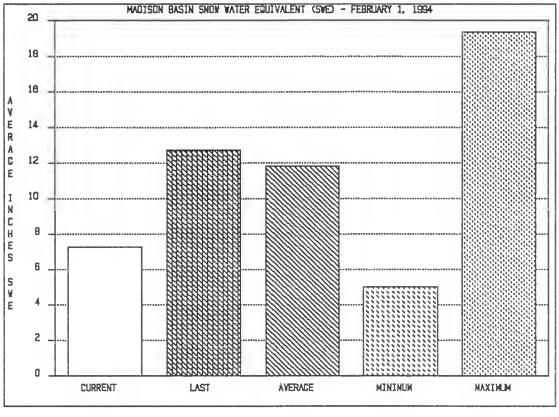
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

MADISON RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
ENNIS LAKE	41.0	29.8	31.7	34.0
HEBGEN LAKE	377.5	259.8	263.6	246.8

MADISON RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MADISON above HEBGEN	7	52	59
LOWER MADISON	6	67	66
MADISON	13	57	62



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1965.

GALLATIN RIVER BASIN as of February 1, 1994

Snowpack conditions in the Gallatin River Basin are below average. Snow water content was 24 percent below average and 18 percent below last year.

Mountain precipitation during January was 21 percent below average and 12 percent above last year. Water year precipitation, beginning October 1, 1993, was 25 percent below average and 24 percent below last year.

Middle Creek storage on the last day of January was 8 percent above average and 39 percent above last year.

Streamflows, for the period April through July, are forecast to be 26 percent below average and 22 percent below last years forecasts.

Surface Water Supply Index (SWSI) was -1.9 for the Gallatin River.

GALLATIN RIVER BASIN
Streamflow Forecasts - February 1, 1994

	<=== Drier ===	Future Conditions		=== Wetter ===>		
Forecast Pt	Chance of Exceeding *					
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
GALLATIN RIVER near Gateway							
APR-JUL	255	300	335	76	370	415	441
APR-SEP	315	370	405	78	440	495	518
E & W FK HYALITE CREEK near Bozeman							
APR-JUL	15.0	17.0	19.0	83	21	24	23
APR-SEP	17.0	20	22	85	24	27	26
HYALITE CREEK near Bozeman							
APR-JUL	23	27	30	83	33	38	36
APR-SEP	28	33	36	86	39	44	42
GALLATIN RIVER at Logan							
APR-JUL	220	305	360	72	420	500	498
APR-SEP	290	375	435	75	495	580	581

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

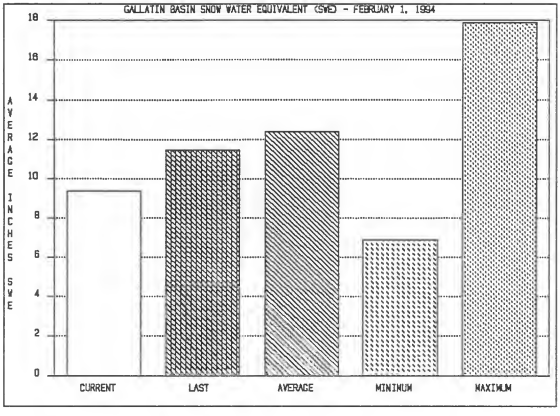
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

GALLATIN RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
MIDDLE CREEK	10.2	3.9	2.8	3.6

GALLATIN RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER GALLATIN	5	69	71
EAST GALLATIN	5	103	82
GALLATIN	9	82	76



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1981.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1965.

MAINSTEM MISSOURI RIVER BASIN as of February 1, 1994

Snowpack conditions in the Mainstem Missouri River Basin were below average. Snow water content was 16 percent below average and 7 percent below last year.

Mountain precipitation during January was 28 percent below average and 6 percent below last year. Water year precipitation, beginning October 1, 1993, was 23 percent below average and 18 percent below last year.

Reservoir storage on the last day of January was 1 percent above average and 9 percent above last year. Canyon Ferry Lake storage was right at average and 10 percent above last year; Helena Valley storage was 4 percent below average and 17 percent below last year; Lake Helena storage was 8 percent above average and 2 percent above last year; Hauser & Helena storage was 4 percent above average and 1 percent above last year; Holter Lake storage was 11 percent above average and the same as last year; and Fort Peck Lake storage was 1 percent below average and 40 percent above last year.

Streamflows, for the period April through July, are forecast to be 32 percent below average 18 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -2.2 in the Missouri River above Canyon Ferry; -2.0 in the Missouri River below Canyon Ferry; -0.8 in the Missouri River above Fort Peck; and -0.6 in the Missouri River below Fort Peck.

MAINSTEM MISSOURI RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt / Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions — Chance of Exceeding * — 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MISSOURI RIVER at Toston							
APR-JUL	640	1100	1420	68	1740	2200	2075
APR-SEP	1010	1340	1670	69	2000	2320	2416
PRICKLY PEAR CREEK near Clancy							
APR-JUL	6.0	11.0	16.0	68	22	32	23
APR-SEP	8.0	13.0	19.0	69	26	37	27
SUN RIVER at Gibson Dam							
APR-JUL	260	340	395	83	450	530	478
APR-SEP	300	385	440	84	495	580	526
MISSOURI RIVER at Fort Benton							
APR-JUL	765	1540	2060	67	2580	3360	3087
APR-SEP	1660	1920	2470	67	3020	3680	3678
MARIAS RIVER near Shelby							
APR-JUL	121	230	300	67	370	480	447
APR-SEP	137	245	320	66	395	505	487

Forecast Pt Forecast Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MISSOURI RIVER at Virgelle							
APR-JUL	1220	1900	2370	66	2840	3520	3595
APR-SEP	1980	2320	2770	66	3220	4470	4217
MISSOURI RIVER near Landusky							
APR-JUL	1530	2110	2510	64	2910	3490	3897
APR-SEP	2130	2670	3040	66	3410	4990	4580
MISSOURI RIVER below Fort Peck							
APR-JUL	1450	2140	2610	65	3080	3770	4015
APR-SEP	1920	2440	2890	65	3340	4780	4467
LAKE SAKAKAWEA Inflow							
APR-JUL	4010	5860	7120	72	8380	10200	9897
APR-SEP	5220	6630	8160	72	9690	12100	11346

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

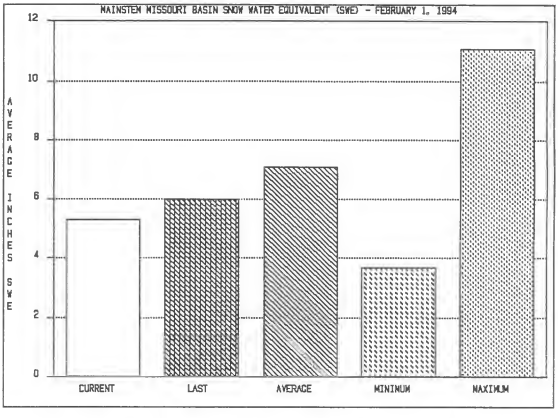
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

MAINSTEM MISSOURI RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
CANYON FERRY LAKE	2043.0	1603.0	1452.0	1596.0
HELENA VALLEY	9.2	4.5	5.4	4.7
LAKE HELENA	10.4	11.1	10.9	10.3
HAUSER & HELENA	61.9	63.7	63.0	61.3
HOLTER LAKE	81.9	81.2	81.5	72.9
FORT PECK LAKE (MAF)	18.9	14.7	10.5	14.9

MAINSTEM MISSOURI RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MISSOURI HEADWATERS	39	68	65
WEST SIDE MISSOURI	6	86	70
SMITH-BELT	4	99	97
MAINSTEM MISSOURI	10	93	84
SUN-TETON-MARIAS	7	102	85
JUDITH-MUSSELSHELL	5	110	101
MISSOURI above FORT PECK	56	77	72
MILK RIVER	8	108	109
MISSOURI in MONTANA	61	80	74
MISSOURI blw YELLOWSTONE	126	87	76



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1961.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS as of February 1, 1994

Snowpack conditions in the Smith-Judith-Musselshell River Basins were near average. Snow water content was 4 percent below average and 2 percent above last year.

Mountain precipitation during January was 15 percent above average and 15 percent above last year. Water year precipitation, beginning October 1, 1993, was 2 percent below average and 7 percent below last year.

Reservoir storage on the last day of January was 38 percent above average and 31 percent above last year. Smith River storage was 38 percent above average and 149 percent above last year; Newlan Creek storage was 27 percent above average; Bair storage was 29 percent above average and 17 percent above last year; Martinsdale storage was 82 percent above average and 188 percent above last year; and Deadman's Basin was 31 percent above average and 8 percent below last year.

Streamflows, for the period April through July, are forecast to be 12 percent below average and 6 percent below last years forecasts.

Surface Water Supply Index (SWSI) was -0.1 in the Smith River and 1.1 in the Musselshell.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Streamflow Forecasts - February 1, 1994

	<=== Drier ===		Future Conditions		=== Wetter ===>		
Forecast Pt	==========		Chance of Exceeding *		==========		
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
SMITH RIVER near Fort Logan							
APR-JUL	27	42	52	84	62	77	62
APR-SEP	37	53	64	88	75	91	73
SHEEP CREEK nr White Sulphur Springs							
APR-JUL	13.8	16.6	18.4	102	20	23	18.1
APR-SEP	16.0	19.0	21	100	23	26	21
NF MUSSELSHELL near Delpine							
APR-JUL	2.7	4.1	5.0	104	5.9	7.3	4.8
APR-SEP	3.2	4.7	5.8	104	6.9	8.4	5.6

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
SF MUSSELSHELL abv Martinsdale							
APR-JUL	11.0	31	45	87	59	79	52
APR-SEP	13.0	34	48	86	62	83	56

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

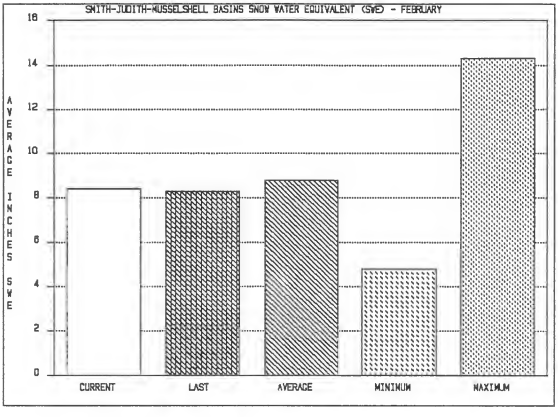
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** This Year	Usable Storage Last Year	******** Average
SMITH RIVER	10.6	8.7	3.5	6.3
NEWLAN CREEK	12.4	11.2	----	8.8
BAIR	7.0	4.9	4.2	3.8
MARTINSDALE	23.1	16.7	5.8	9.2
DEADMAN'S BASIN	72.2	56.4	61.2	43.0

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SMITH-BELT	4	99	97
JUDITH-MUSSELSHELL	5	110	101



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1978.

SUN-TETON-MARIAS RIVER BASINS as of February 1, 1994

Snowpack conditions in the Sun-Teton-Marias River Basin are below average. Snow water content was 15 percent below average and 2 percent above last year.

Mountain precipitation for January was 24 percent below average and 43 percent above last year. Water year precipitation, beginning October 1, 1993, was 23 percent below average and 12 percent below last year.

Reservoir storage on the last day of January was 28 percent above average and 17 percent above last year. Gibson storage was 10 percent above average and 47 percent above last year; Pishkun storage was 11 percent above average and 3 percent above last year; Willow Creek storage was 44 percent above average and 36 percent above last year; Lower Two Medicine Lake storage was 76 percent above average and 3 percent below last year; Four Horns Lake storage was 5 percent above average and 5 percent below last year; Swift storage was 37 percent above average and 70 percent above last year; Lake Frances storage was 35 percent above average and 201 percent above last year; and Lake Elwell (Tiber) storage was 28 percent above average and 7 percent above last year.

Streamflows, for the period April through July, are forecast to be 24 percent below average and 1 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -1.4 in the Sun River; -1.1 in the Teton River; 0.7 in the Birch/Dupuyer Creeks; and -1.2 in the Marias River.

SUN-TETON-MARIAS RIVER BASINS
Streamflow Forecasts - February 1, 1994

Forecast Pt	<=== Drier ===	Future Conditions	=== Wetter ===>		
	Chance of Exceeding *				
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
SUN RIVER at Gibson Dam							
APR-JUL	260	340	395	83	450	530	478
APR-SEP	300	385	440	84	495	580	526
TWO MEDICINE RIVER near Browning							
APR-JUL	81	130	163	76	196	245	215
APR-SEP	92	141	174	76	205	255	228
BADGER CREEK near Browning							
APR-JUL	48	70	84	81	98	120	104
APR-SEP	60	83	98	82	114	136	120
SWIFT RESERVOIR Inflow near Dupuyer							
APR-JUL	30	46	56	82	67	82	68
APR-SEP	39	56	67	84	78	95	80

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
			Chance of Exceeding *				
DUPUYER CREEK near Valier							
APR-JUL	3.1	6.2	9.3	60	15.5	25	15.5
APR-SEP	3.5	7.0	10.5	60	17.0	27	17.4
CUT BANK CREEK at Cut Bank							
APR-JUL	38	53	63	72	73	89	87
APR-SEP	45	59	69	72	79	94	96
MARIAS RIVER near Shelby							
APR-JUL	121	230	300	67	370	480	447
APR-SEP	137	245	320	66	395	505	487

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

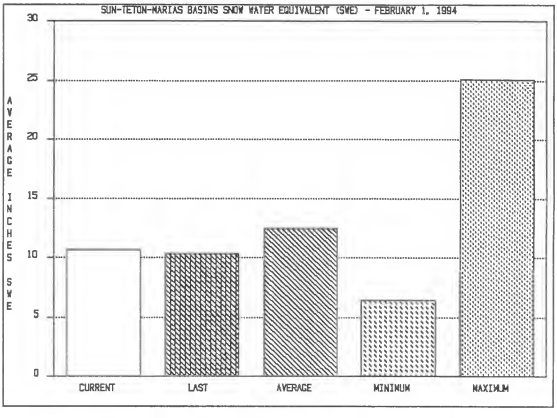
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SUN-TETON-MARIAS RIVER BASINS
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********* This Year	Last Year	Average
GIBSON	99.1	48.4	32.9	44.2
PISHKUN	32.0	19.7	19.2	17.7
WILLOW CREEK	32.2	30.6	22.5	21.2
LOWER TWO MEDICINE LAKE	11.9	11.8	12.1	6.7
FOUR HORNS LAKE	19.2	13.0	13.7	12.4
SWIFT	30.0	20.9	12.3	15.3
LAKE FRANCES	112.0	94.0	31.2	69.6
LAKE ELWELL (TIBER)	1347.0	746.1	694.6	583.0

SUN-TETON-MARIAS RIVER BASINS
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SUN-TETON	3	105	86
MARIAS	4	101	84
SUN-TETON-MARIAS	7	102	85



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.

ST. MARY and MILK RIVER BASINS as of February 1, 1994

Snowpack conditions in the St. Mary and Milk River Basins were near average. Snow water content was 2 percent below average and 7 percent above last year.

Mountain precipitation for January was 17 percent below average and 62 percent above last year. Water year precipitation, beginning October 1, 1993, was 22 percent below average and 12 percent below last year.

Reservoir storage on the last day of January was 58 percent above average and 163 percent above last year. Lake Sherburne storage was 36 percent above average and 24 percent above last year; Fresno storage was 52 percent above average and 206 percent above last year; Beaver Creek storage was 50 percent above average and the same as last year; and Nelson storage was 80 percent above average and 390 percent above last year.

Streamflows, for the period April through July, are forecast to be 25 percent below average and 8 percent below last years forecasts.

Surface Water Supply Index (SWSI) was -1.7 in the Milk River.

ST. MARY and MILK RIVER BASINS
Streamflow Forecasts - February 1, 1994

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions Chance of Exceeding * 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
SWIFTCURRENT CREEK at Sherburne							
APR-JUL	66	76	82	77	89	98	107
APR-SEP	82	91	97	78	103	112	125
ST. MARY RIVER near Babb							
APR-JUL	250	280	305	77	330	360	395
APR-SEP	305	340	365	79	390	425	463
MILK RIVER at Western Crossing							
MAR-JUL	10.0	21	28	64	35	46	44
MAR-SEP	18.0	23	30	65	37	56	46

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
MILK RIVER at Eastern Crossing							
MAR-JUL	12.0	38	56	70	74	100	80
MAR-SEP	46	44	62	70	80	94	88

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

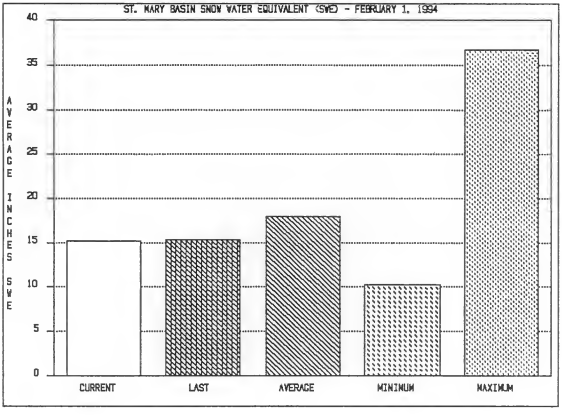
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

ST. MARY and MILK RIVER BASINS
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** This Year	Usable Storage Last Year	********* Average
LAKE SHERBURNE	64.3	32.7	26.4	24.0
FRESNO	127.0	77.8	25.4	51.2
BEAVER CREEK	3.5	2.7	2.8	1.8
NELSON	66.8	65.7	13.4	36.4

ST. MARY and MILK RIVER BASINS
Watershed Snowpack Analysis - February 1, 1994

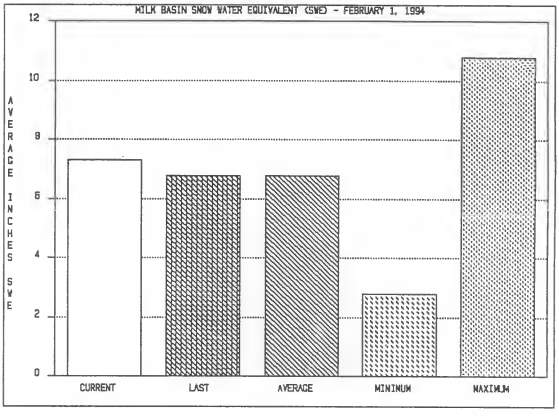
Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MILK HEADWATERS	3	95	90
BEAR PAW	5	135	164
MILK RIVER	8	108	109
ST. MARY	4	99	85
ST. MARY and MILK	9	107	98
BOW RIVER in ALBERTA	12	172	97
OLDMAN RIVER in ALBERTA	4	88	76



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1972.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1973-1993, OCCURRED IN WATER YEAR 1973.

MAXIMUM SNOW WATER EQUIVALENT, 1973-1993, OCCURRED IN WATER YEAR 1978.

UPPER YELLOWSTONE RIVER BASIN as of February 1, 1994

Snowpack conditions in the Upper Yellowstone River Basin were below average. Snow water content was 24 percent below average and 8 percent below last year.

Mountain precipitation for January was 5 percent below average and 60 percent above last year. Water year precipitation, beginning October 1, 1993, was 21 percent below average and 9 percent below last year.

Reservoir storage on the last day of January was right at average and 5 percent above last year. Mystic Lake storage was 44 percent below average and 20 percent above last year and Cooney storage was 26 percent above average and 2 percent above last year.

Streamflows, for the period April through July, are forecast to be 23 percent below average and 4 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -2.9 in the Yellowstone River above Livingston; -1.6 in the Shields River; -2.1 in the Boulder River; -1.7 in the Stillwater River; -0.2 in the Rock/Red Lodge Creeks; -1.9 in the Clarks Fork River; and -2.4 in the Yellowstone River above Bighorn River.

UPPER YELLOWSTONE RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt	<=== Drier ===	Future Conditions	=== Wetter ===>			
	Chance of Exceeding *					
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
YELLOWSTONE RIVER at Corwin Springs							
APR-JUL	975	1100	1190	74	1280	1400	1609
APR-SEP	1120	1290	1400	72	1510	1680	1937
YELLOWSTONE RIVER near Livingston							
APR-JUL	1110	1260	1360	73	1460	1620	1855
APR-SEP	1310	1490	1610	72	1730	1910	2241
SHIELDS RIVER near Livingston							
APR-JUL	82	116	139	86	162	196	162
APR-SEP	95	130	154	86	178	215	179
BOULDER RIVER at Big Timber							
APR-JUL	188	230	255	76	280	320	335
APR-SEP	200	245	270	74	295	340	364
WEST ROSEBUD CREEK near Roscoe							
APR-JUL	37	44	49	80	54	61	61
APR-SEP	50	58	63	80	68	76	79
STILLWATER RIVER nr Absarokee							
APR-JUL	280	360	415	83	470	550	498
APR-SEP	365	445	500	84	555	635	593

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
			Chance of Exceeding *				
CLARKS FORK RIVER near Belfry							
APR-JUL	300	370	415	78	460	530	532
APR-SEP	335	415	470	80	525	605	590
RED LODGE CREEK blw Cooney Res							
APR-JUL	15.0	33	45	96	57	75	47
APR-SEP	26	44	56	98	68	86	57
YELLOWSTONE RIVER at Billings							
APR-JUL	1970	2460	2790	78	3120	3610	3577
APR-SEP	2570	2940	3300	78	3660	4000	4211

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

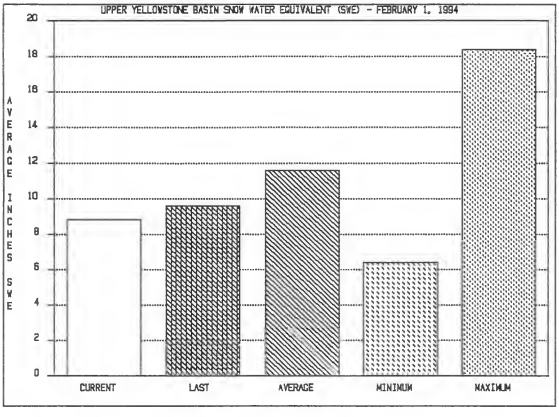
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER YELLOWSTONE RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
MYSTIC LAKE	21.0	4.8	4.0	8.5
COONEY	27.4	18.4	18.1	14.6

UPPER YELLOWSTONE RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
YELLOWSTONE ab LIVINGSTON	14	80	67
SHIELDS	4	104	85
BOULDER-STILLWATER	3	103	89
CLARK'S FORK-ROCK CREEK	9	103	79
UPPER YELLOWSTONE above BIGH	26	92	76



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1965.

LOWER YELLOWSTONE RIVER BASIN as of February 1, 1994

Snowpack conditions in the Lower Yellowstone River Basin were below average. Snow water content was 22 percent below average and 3 percent below last year.

Mountain precipitation for January was 67 percent above average and 144 percent above last year. Water year precipitation, beginning October 1, 1993, was 10 percent above average and 21 percent above last year.

Reservoir storage on the last day of January was 3 percent below average and 4 percent below last year. Bighorn Lake storage was 3 percent below average and 4 percent below last year and Tongue River storage was 30 percent below average and 4 percent above last year.

Streamflows, for the period April through July, are forecast to be 23 percent below average and 4 percent below last years forecasts.

Surface Water Supply Indexes (SWSI's) were -1.0 in the Bighorn River below Bighorn Lake; 2.2 in the Little Bighorn River; -1.9 in the Yellowstone River below Bighorn River; 0.8 in the Tongue River; and 0.1 in the Powder River.

LOWER YELLOWSTONE RIVER BASIN
Streamflow Forecasts - February 1, 1994

Forecast Pt / Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions — Chance of Exceeding * — 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
YELLOWSTONE RIVER at Billings							
APR-JUL	1970	2460	2790	78	3120	3610	3577
APR-SEP	2570	2940	3300	78	3660	4000	4211
BIGHORN RIVER nr St. Xavier							
APR-JUL	455	830	1080	66	1330	1700	1645
APR-SEP	535	925	1190	66	1460	1810	1794
LITTLE BIGHORN RIVER nr Hardin							
APR-JUL	64	120	157	112	195	250	140
APR-SEP	76	136	177	113	220	280	157
TONGUE RIVER near Decker							
APR-JUL	162	215	250	113	285	340	221
APR-SEP	195	245	280	115	315	365	244
YELLOWSTONE RIVER at Miles City							
APR-JUL	2340	3370	4070	75	4770	5800	5431
APR-SEP	3080	3900	4700	75	5500	6220	6281
POWDER RIVER at Moorhead							
APR-JUL	108	157	190	90	225	270	211
APR-SEP	135	180	210	91	240	285	232

Forecast Pt / Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	===> Wetter 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
POWDER RIVER near Locate							
APR-JUL	161	205	235	93	265	310	252
APR-SEP	86	225	255	92	285	390	276
YELLOWSTONE RIVER nr Sidney							
APR-JUL	2750	3860	4620	78	5380	6490	5925
APR-SEP	3270	4230	5110	75	5990	7290	6814

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

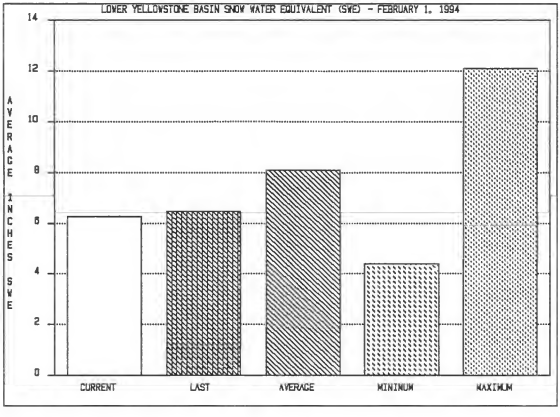
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

LOWER YELLOWSTONE RIVER BASIN
Reservoir Storage (1000AF) End of January

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
BIGHORN LAKE	1356.0	817.3	848.7	839.2
TONGUE RIVER	68.0	19.1	18.4	27.1

LOWER YELLOWSTONE RIVER BASIN
Watershed Snowpack Analysis - February 1, 1994

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WIND RIVER (Wyoming)	17	71	58
BIGHORN RIVER (Wyoming)	20	111	87
LITTLE BIGHORN	3	133	116
TONGUE RIVER (Wyoming)	10	114	99
POWDER RIVER (Wyoming)	9	115	90
YELLOWSTONE RIVER	69	95	78



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1993, OCCURRED IN WATER YEAR 1983.

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SOIL CONSERVATION SERVICE

Montana
Basin Outlook Report

Soil Conservation Service
Bozeman, MT